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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,554	02/19/2004	Brooke L. Small	210507US (4081-03900)	5152

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CHEVRON PHILLIPS CHEMICAL COMPANY		
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EXAMINER	
NGUYEN, TAM M	

ART UNIT	PAPER NUMBER
1797	

MAIL DATE	DELIVERY MODE
02/07/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/782,554

**Applicant(s)**

SMALL ET AL.

**Examiner**

Tam M. Nguyen

**Art Unit**

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29, 31-54, 56-67 is/are pending in the application.
- 4a) Of the above claim(s) 13-19 and 39-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 20-29, 31-38, 46-54 and 56-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Status of Claims*

It is reminded that claims 13-19, 39-45, and 68-76 are withdrawn from further consideration as being drawn to species other than the selected specie.

Claims 30, 55, and 68-76 have been canceled by Applicants.

Claims 1-12, 20-29, 31-38, 46-54, and 56-67 are pending.

No claim is allowanced.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12, 20-22, 25-29, 31, 32, 35-38, 46-54, 56, 57, 60-64, and 67 are rejected under 35 U.S.C. 102(e) as being anticipated by De Boer et al. (U.S 7,049,442).

De Boer discloses an olefin oligomerization process by using a catalyst system as claimed. An olefinic feedstock (e.g., 99% pure ethylene) is passed into an oligomerization reactor to product a process comprises a product as claimed. The oligomerization process is carried out in a stirred tank reactor and is operated at a temperature of from 50° C to 150° C and a pressure of from 1 to 10 MPa. The effluent from the oligomerization reactor comprises 1-dodecene. It is believed that the catalyst system of De Boer is the same as the claimed catalyst

Art Unit: 1797

system. (See col. 4, lines 20-65; col. 5, lines 48-56; col. 9, lines 19-39; col. 10, lines 1-37, 45-47; col. 11, lines 1-4, 30-39; Examples 1, 2 and 5-10 and Tables I-II)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1797

Claims 23, 24, 65 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Boer et al. (U.S 7,049,442).

The process of De Boer is as discussed above.

De Boer does not disclose that the fluid flow in the reactor has a Reynolds number of in the loop reactor is from about 200,00 to about 700,000 or in a tubular reactor is from 300,000 to about 2,000,000, does not disclose that a step of cooling the reactor with a coolant more volatile than water (e.g., butane or isobutane),

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of De Boer by utilizing a Reynolds number as claimed because it is within the level of one of skill in the art to utilize any effective flow rate including the flow rate having the claimed Reynolds numbers.

Claims 33, 34, 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Boer et al. (U.S 7,049,422) as applied to claims 1 and 36 above, and further in view of Takeda et al. (5,830,955)

De Boer does not disclose that a step of cooling the reactor with a coolant more volatile than water (e.g., butane or isobutane).

Takeda disclose a method of cooling a reactor by utilizing a coolant such as isobutane. See col. 9, lines 50-53; col. 10, lines 3-7.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Takeda by utilizing a coolant as taught by Takeda because such coolant is effective to cook the reactor.

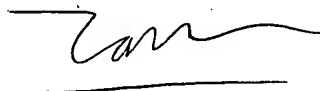
*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tam M. Nguyen  
Examiner  
Art Unit 1764



TN